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A NEW SPECIES OF *HETERONEBO* FROM JAMAICA (SCORPIONES, DIPLOCENTRIDAE)

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ABSTRACT

Heteronebo franckei, new species, is described from Jamaica and new Jamaican locality records are reported for *Heteronebo jamaicae portlandensis* Francke and *Heteronebo jamaicae occidentalis* Francke.

INTRODUCTION

The diplocentrid scorpion fauna of Jamaica was described by Francke (1978) and reviewed by Armas (1982). Two species (one with three subspecies) are known to occur on Jamaica: *Heteronebo elegans* Francke, *Heteronebo jamaicae jamaicae* Francke, *H. jamaicae occidentalis* Francke, and *H. jamaicae portlandensis* Francke. In the present paper, a newly discovered species of *Heteronebo* from Portland and St. Thomas Parishes is described and new locality records are reported for *H. jamaicae portlandensis* and *H. jamaicae occidentalis.*

METHODS

The description format and terminology follow that of Francke (1978) and Francke and Sissom (1980) except for the measurements of the chelicerae. In the present paper, the cheliceral chela length is measured along the dorsal surface of the chela from the posterior margin to the distal tip of the fixed finger. One hemispermatophore of the holotype was removed and examined in 100% lactophenol as described by Cokendolpher (1984) for opilionid genitalia. A Wild M7A dissecting microscope equipped with an ocular micrometer and a drawing tube was used to make all measurements (in millimeters) and drawings of the holotype. Acronyms for collections from which specimens were examined are given in the acknowledgments.

Heteronebo franckei, new species
Figs. 1-8

Type data.—Holotype male from near the mouth of Christmas River, Portland Parish, Jamaica, West Indies, 15 December 1969 (P. A. Drummond), deposited in FSCA. Seven paratypes are listed under specimens examined.

Etymology.—Named in honor of Dr. Oscar F. Francke in recognition of his contributions to scorpion biology and systematics.

Distribution.—Known from near the mouths of Christmas and Priestman's Rivers, Portland Parish, and the Horse Savanna and Crookshank Rivers, St. Thomas Parish, Jamaica, W. I. (Fig. 9).

Diagnosis.—*Heteronebo franckei,* new species, is placed in the *bermudezi* species group (Francke 1978) with *Heteronebo bermudezi* (Moreno), *Heteronebo caymanensis* Francke, and *H. jamaicae.* This group is characterized by dense, small and minute granulation on the lateral and ventral carinae of metasomal segment V. *Heteronebo franckei* is distinguished from other species of *Heteronebo* by the following combination of characteristics. Pedipalp chela length in adult males less than twice chela width, in females and immature males greater than twice chela width; pedipalp chelae weakly carinate; metasomal segment II wider than long; metasomal segment III in adult males slightly longer than wide, in females and immature males as wide or wider than long; setation on dorsal lateral carinae of metasomal segments I-IV, 1:1:1:1; metasomal segment V ventral median and ventral lateral carinae moderately strong with small to medium sized, low tubercles; pectinal tooth count in males 8, in females 7; prolateral pedal spurs large, well developed on all legs; tarsomere II spine formula 4-5/4:5/5:6/7:7/7.

Description.—With the characters of the genus (Francke 1978). Measurements of the holotype and a female paratype are given in Table 1. The following description is based on the adult male; parenthetical statements refer to females and immature males.

Prosoma: Carapace brown in color, median ocular tubercle and lateral ocular tubercles dark brown; carapace densely granular, weakly emarginate anteriorly; median anterior notch shallow (moderately deep), rounded (v-shaped). Venter brownish-yellow, moderately setate, densely punctate.

Mesosoma: Tergites brown in color, densely granular interspersed with small rounded tubercles. Tergite VII strongly bilobed posterolaterally; submedian carinae weak on posterior one-fourth, with single row of low, close tubercles; lateral carinae moderately strong on posterior half, with irregular row of low tubercles. Genital operculi yellow, subelliptical; pectinal tooth count in males 8, in females 7; sternites yellow, lustrous, densely punctate. Sternite VII submedian carinae weak on posterior one-half, crenate; lateral carinae moderately strong to weak on posterior half, crenate.

Metasoma: Reddish-brown in color, punctate, minutely coarsely granular; segments I and II wider than long, segment III slightly longer than wide (as wide as or wider than long). Ventral submedian carinae on segments I-III weak, crenate (with irregular rows of medium sized tubercles); on segment IV very weak with small, scattered tubercles. Ventral lateral carinae on segments I-IV weak, crenate (with irregular rows of medium sized tubercles) on I-III, with small scattered tubercles on IV. Lateral inframedian carinae weak on segment I, very weak on segments II and III, vestigal on segment IV; with a few small, scattered

Table 1.—Measurements (in millimeters) of *Heteronebo franckei.*

Character	Holotype male	Paratype female
Total length	31.20	37.10
Carapace length	4.95	5.85
Anterior width/posterior width	3.00/5.25	3.90/6.60
Width at median eyes	4.30	5.20
Mesosoma length	10.20	13.75
Metasoma length	16.05	17.50
I length/width	2.40/3.20	2.60/3.70
II length/width	2.70/2.90	2.95/3.30
III length/width	2.90/2.80	3.20/3.20
IV length/width	3.50/2.65	3.85/3.05
V lenght/width	4.55/2.50	4.90/2.90
Telson length	4.35	5.10
Vesicle length/width/depth	3.50/2.20/1.70	4.15/2.95/2.30
Aculeus length	0.90	0.90
Pedipalp length	15.65	19.15
Femur length/width/depth	3.50/1.65/1.80	4.05/1.95/2.20
Tibia length/width/depth	3.60/1.80/2.05	4.30/2.10/2.50
Chela length/width/depth	8.55/4.65/2.80	10.80/5.30/3.40
Movable finger length	5.40	7.00
Fixed finger length	3.60	4.80
Chelicera chela length/width	2.40/1.15	2.80/1.35
Movable finger length	1.50	1.80
Fixed finger length	0.90	1.10

tubercles. Lateral supramedian carinae on segments I-IV weak with small irregularly spaced tubercles. Dorsal lateral carinae weak on segments I-IV, irregularly granulose. Setation of dorsal lateral carinae on segments I-IV, 1:1:1:1:. Segment V ventral median carina moderately strong with wide row of small to medium sized tubercles and strong subterminal bifurcation with large tubercles (Fig. 5). Ventral lateral carinae moderately strong, irregularly tuberculate anteriorly; with a single row of large tubercles distally. Lateral median carinae very weak on anterior three-fourths with small scattered tubercles. Dorsal lateral carinae weak to vestigal, irregularly granulose. Anal arc rounded; subterminal keel weak to moderately strong with a row of close, medium sized tubercles; terminal keel obsolete, smooth. Telson slightly elongate (globular), moderately granulose, sparsely setate, densely punctate.

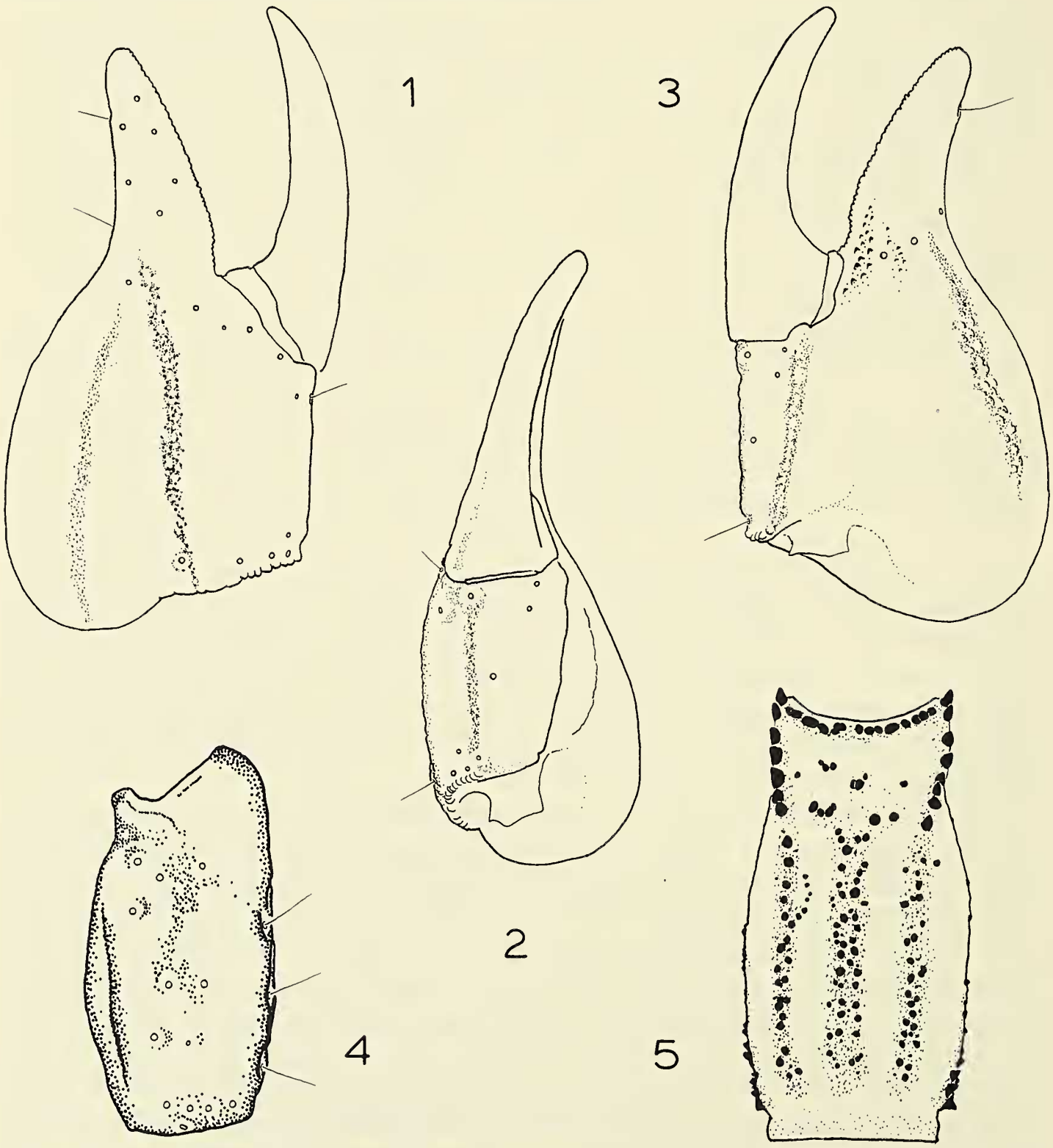
Pedipalps: Reddish-brown in color, orthobothriotaxia C, densely punctate. Femur trapezoidal in cross section, deeper than wide; dorsal internal keel obsolete; dorsal external keel weak with medium sized tubercles; ventral external keel obsolete; ventral internal keel moderately strong, coarsely granular; dorsal and internal faces densely and coarsely granular; ventral face minutely granular. Tibia much shorter than chela width (Fig. 4); dorsal internal keel obsolete; basal tubercle weak, represented by a few small tubercles; dorsal median keel moderately strong, weakly tuberculate; dorsal external keel moderately strong, weakly granular; external keel weak with obscure, scattered granules; ventral internal keel moderately strong, smooth to vestigally granulose; ventral external keel moderately strong, smooth; internal faces shagreened, dorsal external face moderately granular; other external and ventral faces very minutely shagreened.

Chela robust (Figs. 1-3) (inflated), moderately granulose, reticulate, densely punctate; digital keel weak (very weak), vestigally granulose (smooth); dorsal secondary keel vestigal, granular; external secondary keel obsolete; ventral external keel weak distally (vestigal distally), vestigally granular (smooth); ventral median keel weak, crenate (smooth); ventral internal keel weak (vestigal), smooth. Dentate margins of fingers densely tuberculate.

Legs: Yellow in color. All segments except tarsomeres shagreened. Prolateral pedal spurs large, well developed on all legs. Variation in tarsomere II spine counts shown in Table 2.

Hemispermatophore: See Figs. 6-8. Lamina length, 3.9 mm.

Habitat.—All specimens of *H. franckei* were collected from near the mouths of rivers in organic litter amid limestone pebbles.



Figs. 1-5.—*Heteronebo franckei,* new species, male holotype: 1, right pedipalp chela, external aspect showing trichobothrial pattern; 2, right pedipalp chela, ventral aspect; 3, right pedipalp chela, internal aspect; 4, right pedipalp tibia, external aspect; 5, metasomal segment V, ventral aspect.

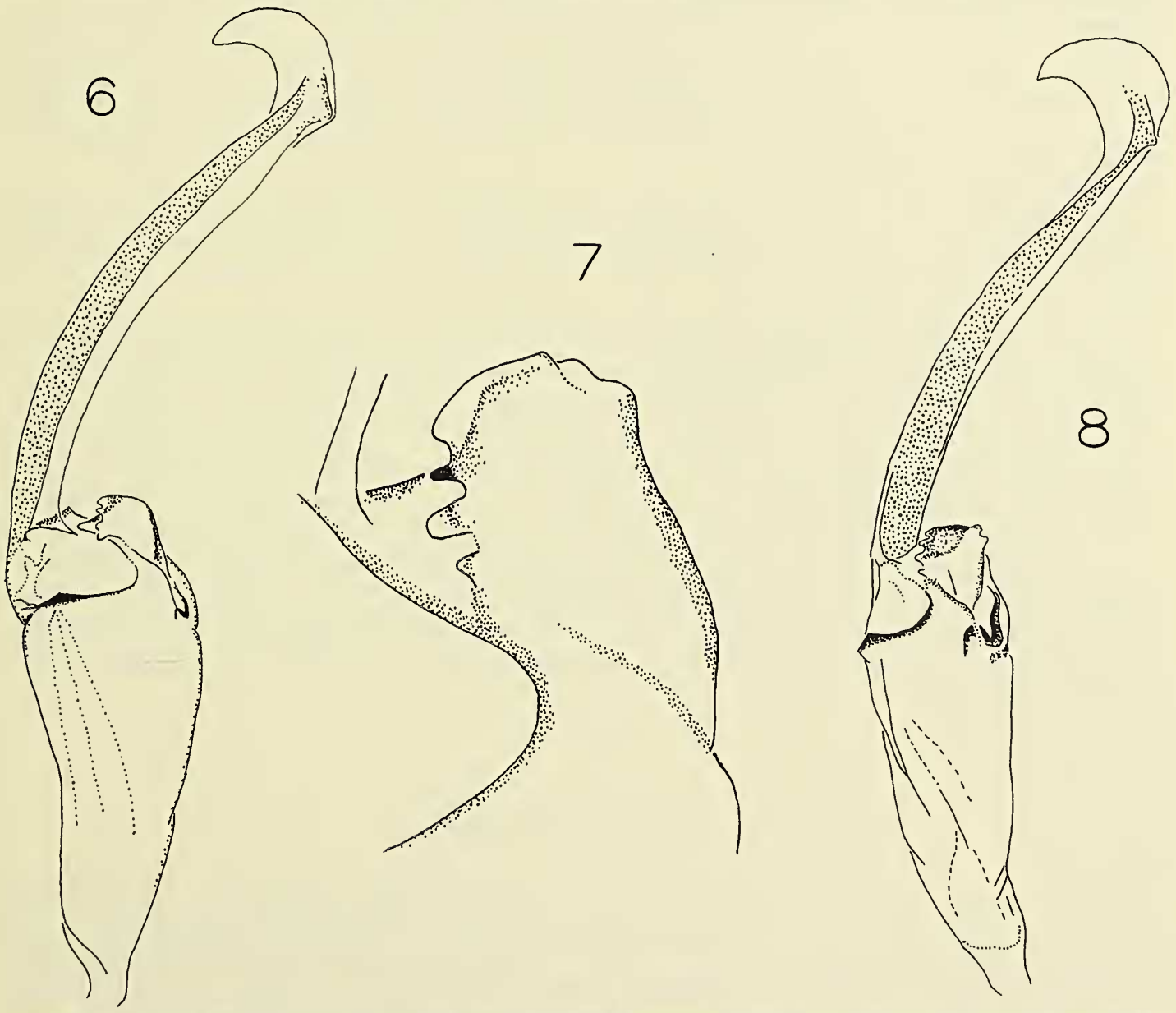
Table 2.—Variability in tarsomere II spine counts for *Heteronebo franckei.*

	Leg I		Leg II		Leg III			Leg IV		
No. of spines in row	4	5	5	6	3	6	7	6	7	8
Males										
Prolateral row	4	4	7	1	-	8	-	-	8	-
Retrolateral row	6	2	7	1	-	3	5	-	7	1
Females										
Prolateral row	2	6	7	1	1	6	1	1	7	-
Retrolateral row	6	2	8	-	-	2	6	1	5	2

Specimens examined.—JAMAICA: *Portland Parish,* mouth of Priestman's River, 15 December 1969 (P. A. Drummond), 1 adult female (FSCA), 1 immature female, 2 immature males (FSCA); *St. Thomas Parish,* along Crookshank River near sea, 16 March 1969 (P. A. Drummond), 1 subadult male (FSCA), just above mouth of Horse Savanna River, 16 December 1969 (P. A. Drummond), 1 immature female (FSCA), near N bank of mouth of Horse Savanna River, 15 June 1970 (P. A. Drummond), 1 adult female (OFF).

DISTRIBUTION OF *HETERONEBO* ON JAMAICA

This genus is represented on Jamaica by three species (one with three subspecies) (Fig. 9). *Heteronebo franckei* is known from the coastal regions of



Figs. 6-8.—*Heteronebo franckei,* new species, male holotype, right hemispermatophore: 6, external (lateral) aspect; 7, detail of capsular region, dorsolateral aspect; 8, dorsal aspect.

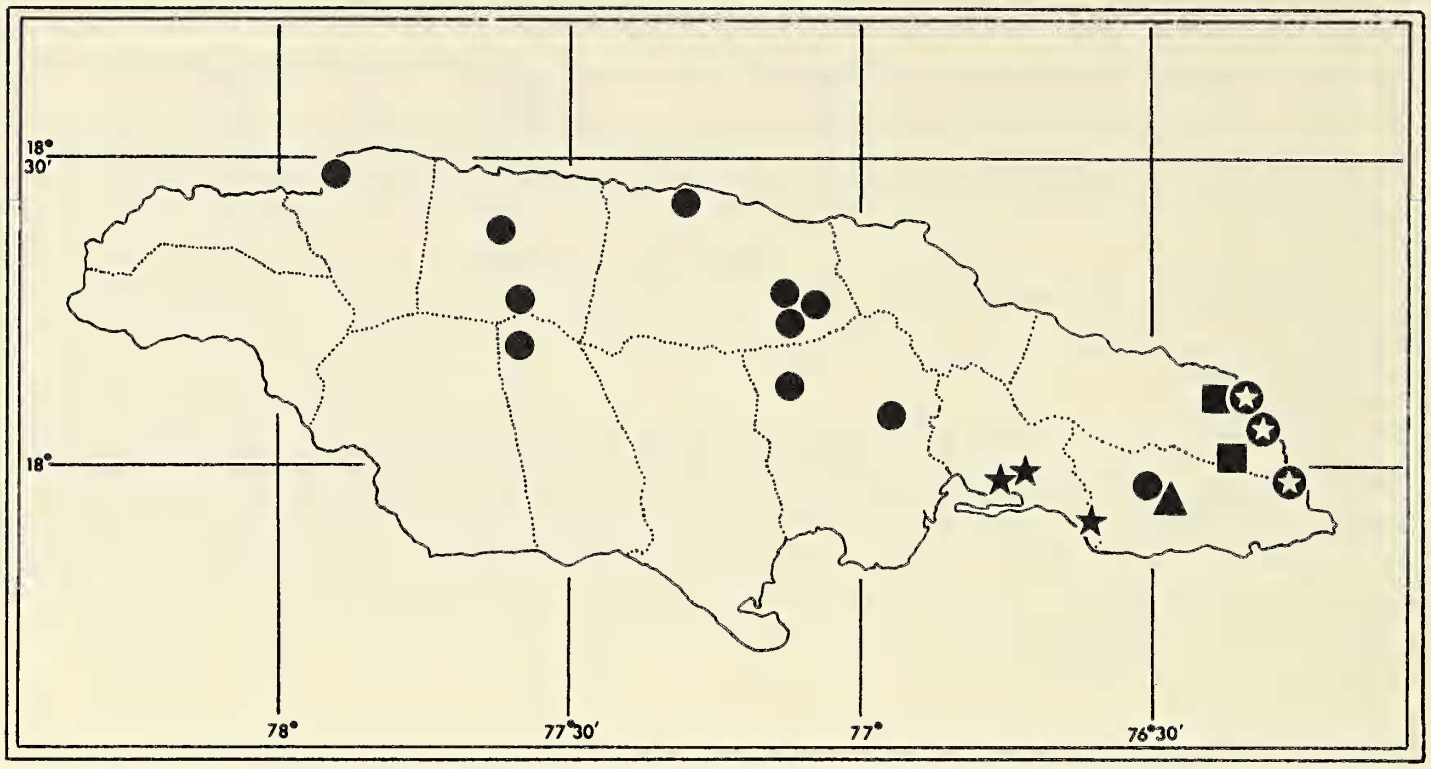


Fig. 9.—Map showing distribution of *Heteronebo* species on Jamaica, West Indies. Triangle = *H. elegans* Francke; star = *H. jamaicae jamaicae* Francke; solid circle = *H. jamaicae occidentalis* Francke; square = *H. jamaicae portlandensis* Francke; circled star = *H. franckei,* new species.

Portland and St. Thomas Parishes. *Heteronebo elegans* is known only from St. Thomas Parish and *Heteronebo jamaicae portlandensis* is known only form Portland Parish. *Heteronebo jamaicae jamaicae* is known from St. Andrews and St. Thomas Parishes and *H. jamaicae occidentalis* is known from the largely mountainous regions of Manchester, St. Ann, St. Catherine, St. James, St. Thomas, and Trelawny Parishes.

New locality records.—*Heteronebo jamaicae portlandensis* was previously known by a single specimen from the John Crow Mountains, Portland Parish. It is now known from the following locality. JAMAICA: *Portland Parish,* mouth of Priestman's River, 15 December 1969 (P. A. Drummond), 1 immature female (FSCA).

Heteronebo jamaicae occidentalis, formerly known only from St. James and Trelawny Parishes, is recorded from the following localities. JAMAICA: *Manchester Parish,* 2.4 mi. S. along road to Harry Watch of Craig Head, 27 March 1969 (P. A. Drummond), 1 female (FSCA); *St. Ann Parish,* 2.0 mi. along Hollymount Road from junct. with Al, 28 March 1969 (P. A. Drummond), 2 females (FSCA), 3.9 mi. along Hollymount Road from junct. with Al, 28 March 1969 (P. A. Drummond), 1 female (FSCA), 4.2 mi. along Hollymount road from junct. with Al, 28 March 1969 (P. A. Drummond), 1 male, 1 female (OFF), Rose Hill above Runaway Bay, 5 December 1969 (P. A. Drummond), 1 male, 1 female (FSCA); *St. Catherine Parish,* 0.2 mi. W of Sligoville, 18 March 1969 (P. A. Drummond), 1 female (FSCA), 2.2 mi. N of Worthy Park Crossroads, 19 June 1970 (P. A. Drummond), 1 female (FSCA); *St. Thomas Parish,* along path to Corn Puss Gap from S, 20 May 1969 (P. A. Drummond), 1 male (FSCA); *Trelawny Parish,* Tyre (2 mi. N of Troy), 16 May 1969 (P. A. Drummond). 1 male, 1 female (FSCA).

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LITERATURE CITED

Armas, L. F. de. 1982. Algunos aspectos zoogeográficos de la escorpiofauna antillana. Poeyana, No. 238, 17 pp.

Cokendolpher, J. C. 1984. A new genus of North American harvestmen (Arachnida: Opiliones: Palpatores). Pp. 27-43, *In* Festschrift for Walter W. Dalquest in honor of his sixty-sixth birthday (N. V. Horner, ed.). Midwestern State Univ., Wichita Falls, xx + 168 pp.

Francke, O. F. 1978. Systematic revision of diplocentrid scorpions (Diplocentridae) from circum-Caribbean lands. Spec. Publ., Mus., Texas Tech Univ., No. 14, 92 pp.

Francke, O. F. and W. D. Sissom. 1980. Scorpions from the Virgin Islands (Arachnida, Scorpiones). Occas. Pap., Mus., Texas Tech Univ., No. 65, 19 pp.

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